



Chemonics International

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**Madagascar Cyclone Recovery Program
Rural Roads Infrastructure and Systems Rehabilitation
ReCap Project**

Second Annual Implementation Plan



April 1, 2002 to December 15, 2002

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List of Acronyms

AUP	Association des Usagers de la Piste (Road Users Association)
CO	Contracting Officer
COP	Chief of Party
EIA	Environmental Impact Assessment
ESF	Environmental Screening Form
FCE	East Coast Rail Line
FCER	FCE Rehabilitation Project
FAR	Federal Acquisition Regulations
FID	Fonds d'Intervention pour le Développement
FMG	Malagasy Francs
GOM	Government of Madagascar
GTDR	Groupe Technique pour le Développement Rurale
IQC	Indefinite Quality Contract
LDI	Landscape Development Interventions
MOE	Ministry of Environment
MTP	Ministère des Travaux Publics
ONE	Office Nationale de l'Environnement
PIL	Project Implementation Letter
PST	Programme Sectoriel de Transport
RAISE	Rural and Agricultural Income with a Sustainable Environment
RFB	Request for Bids
RFP	Request for Proposals
RIP	Route d'Intérêt Provincial (Road of Provincial Interest)
RP	Route Provinciale
RN	Route Nationale
RNT	Route Nationale Temporaire (Temporary National Road)
SG	Secretary General
TVA	Value Added Tax
USAID	United States Agency for International Development
USG	United States Government

1. Executive Summary

The ReCap Second Annual Implementation Plan, submitted approximately one year after the first, covers the period from April 1, 2002 to project closeout. The second and final year of the ReCap project is crucial to its overall success because there is so much to accomplish, yet a very uncertain climate in which to work.

The on-going political crisis in Madagascar calls for a rethinking of our plans for the second year. We see three alternatives:

- **Change the performance targets: shift remaining funds to bridge repair along the RNT14** We had counted on the GOM to repair these bridges, to complement our rehabilitation work. Since the GOM will not, however, be able to fulfill its commitment, our first choice is to do it ourselves, for safety reasons. To accomplish that work this year, however, we would be able to do it only if we made that decision by xxxx and were able to begin the technical studies by xxxx. A modification to our contract would be necessary.
- **Proceed with the original goal of completing the RNT 14 and 140 km of tertiary roads.** If we can issue start work orders by July 1 and assuming no delays due to civil unrest after that, we should be able to accomplish the original goals. This will require very close supervision of construction firms to make up for lost time so far this year.
- **Reduce the performance targets or extend the project.** If we are not able to sign start work orders by July 1, we will need to renegotiate the performance targets or seek an extension of the project.

Status of work in progress. Project activities have slowed since February and have been suspended since March due to the fuel shortage, roadblocks and insecurity in the provinces. Critical time-sensitive activities such as the completion of field surveying, site visits to the Port of Manakara and to the first sections of tertiary roads have been delayed because of the crisis. While we will do our best to continue our activities, the problems stated above makes it difficult for us to travel to the field. Firms are also having difficulties continuing and it will be hard for new subcontractors to start new work.

The rehabilitation of the RNT 14 will continue after the end of the rainy season because the firms were unable to complete the work by their scheduled completion dates. The firm on Lot 1, EBMA, has been having trouble completing their forty-one kilometer section, therefore they will be asked to subcontract a portion of their work to another firm. Work on Lot 1 will be completed by June 30th.

EGECORAM will also resume work in April and complete its subcontract, which will include additional work for the rehabilitation of part of the town of Ikongo, by May 31, 2002. EGEORAM also won the RFB to rehabilitate the six-kilometer tertiary road from the Andemaka to the town of Manapatrana.

Work on Lots 2 and 3 of the Sahasinaka road are now completed and Lot 1 is near completion.

Work to start in 2002. Field surveying for the first sections of tertiary roads to be rehabilitated in the Imermandroso/Ambatondrazaka region were completed in February. The bids were launched on March 25th and proposals are due on April 15th.

The subcontracts should be signed in early May and work should commence later that month. Field survey work for the second group of roads in Tamatave started in early April. The bids will be launched in May and work should start on July 1. With a proposed delay of 4 to 5 months, roadwork should continue until September or October.

The subcontract for the repair of two warehouses at the Port of Manakara is ready for signature and will be signed once conditions permit. The RFP for the wharf repair was launched in March with proposals due on April 26th. Work will start on May 28th and last 6 months to November.

2. Strategic Challenges

Minimize political situation's negative impact on the project, achieve the best possible results. Given the current political stalemate and the difficulties in continuing normal project activities at this time, it may be difficult to start certain activities as scheduled. If the stalemate continues, USAID and Chemonics will have to consider extending the project completion date. An extension will have another beneficial effect in that the guarantee periods will be prolonged allowing the roads to be monitored during the rainy season.

Minimize delays caused by construction firms' unrealistic planning: choose larger firms and/or divide the work into smaller lots. Firms and subcontractors often are too optimistic in estimating work progress. The following conditions were overlooked in estimating completion dates: the time it would take firms to mobilize, the downtime due to equipment breakdowns, rain delays and the general lack of organizational capacity of the local construction firms.

In order to minimize delays due to the frequent breakdown of old, used equipment being pushed to their limits on major projects of twenty or more kilometers, future road sections will be divided into smaller lots. While the smallest lot in Year 1 was twelve kilometers, in Year 2, the longest lot will be nearly that length. Lots will be divided into sections of between 5 and 10 kilometers up to a maximum of 15. Lots greater than 10 kilometers will be offered only to the better performing firms of Year 1 and those with extensive experience completing similar projects. The pre-selection process for firms was also made more rigorous and only firms who have completed previous projects of over one billion Malagasy francs, instead of half a billion, were pre-selected.

Provide closer, more pro-active engineering supervision. Closer monitoring by the ReCap site engineers will be reinforced and any delays must be quickly addressed. During the first year of the project delays were allowed to accumulate and corrective action was almost always taken too late. There will be little room for error this year and firms that are not moving forward according to their contractual work plans will be officially notified and penalized according to the terms of the subcontract.

Table 1: Different Scenarios regarding the resumption of project activities

Date firms can resume work *	May 1, 2002	June 1, 2002	July 1, 2002	August 1, 2002
RNT 14 completed on:	June 30	July 31	August 31	September 30
Tertiary roads completed on:	September 30	October 31	November 30	December 31
Manakara wharf repair completed on:	October 31	November 30	December 31	January 31

Note: this assumes the following: fuel shortage resolved, roadblocks removed and security situation improved.

Complete the RNT 14 and repair the bridges. The firms selected for the work on the RNT 14 have experienced significant delays in completing their subcontracts. EBMA had stated in their proposal that they could complete the work in five months. As of their contractual end date barely half of the work had been completed.

Due to the difficulties in working during the rainy season, they were granted a partial work stoppage and will resume work in April or May. Given the high quantities of work remaining, their subcontract will be amended reducing the amount of work that they will have to complete to a more manageable size. EBMA will then be notified by the ReCap project to subcontract with another firm who will be designated to complete a portion of the remaining work. This way, EBMA will be able to concentrate its efforts on completing work on the first section of the road and the second firm will be able to complete the work on the second remaining section that EBMA had started.

There are three bridges along the RNT 14 between PK 41 and 46 at the town of Tolongoina. The first is the longest at seventy-one meters in length and is in a serious state of decay. The steel supports are almost completely rusted through (see the picture below) and since our warning last year to the authorities, trucks have been forbidden to cross the bridge. Any private individual wanting to drive over the bridge does so at their own risk and has to sign a release before being allowed to proceed. The second is a twenty-meter wood bridge with steel supports that needs to have rotted sections replaced. The third was a fifteen meter steel bridge like the first one that failed under the weight of a truck in late 2000. The LDI program has constructed a temporary crossing.

As long as the first bridge is not repaired, the section of road between beyond that point remains inaccessible for trucks and the road risks being cut off when the bridge collapses. The investment in the road is also put into question because the road rehabilitation will have been incomplete.



Figure 1: Decayed steel structure of bridge at PK 41 on RNT 14

These bridges were supposed to be repaired by the GOM through funding by the ADB, however the bidding process for the procurement of Bailey bridges has been continually delayed and is now more uncertain given the current political crisis. Another option would be for the ReCap project to re-allocate funds to the repair of the

bridges from the tertiary road budget for 2002. This option would need to be approved by USAID and would require an extension along with an increase in the associated fixed costs.

Deal with the consequences of a shortened guarantee period. Under normal circumstances, a one-year guarantee period is required for construction work. During this period the firm is responsible for maintaining the structure and is required to repair any faulty or deficient work. Five or ten percent of the contract amount is usually retained as a deposit and is only paid to the firm after the guarantee period.

The guarantee period for our road projects, assuming a December project close out, will be up to seven months for the Sahasinaka road to as little as one or two months for the wharf repair and some of the tertiary roads. The reduced guarantee period may lead to certain construction defects not being detected and repaired and the roads risk not being properly maintained at the firm's expense during the full normal one-year period. An extension of the project end date would allow project staff to properly monitor the roads, especially during next year's rainy season.

Complete wharf and warehouse repair. Two of the warehouses and part of the wharf will be repaired by the ReCap project this year at the Port of Manakara. Significant damage caused by years of neglect and the lack of regular maintenance has led to the northern section of the wharf being condemned and not functional. The concrete supports have been eroded and the sub-structure has been weakened. The ReCap project will subcontract with an experienced construction firm to reinforce and repair the northern section of the wharf.

Given the extent of the repairs and the complex nature of the engineering work that is required, it is important that this work start no later than July 1 so that it is completed before the project end date. An inexperienced firm may not be able to complete this work in five months as scheduled. Consequently, international firms such as Colas or SOGEO who have completed similar work will be favored when bidding on this project. The wharf repair contract must be awarded to the most technically qualified firm who is most likely to complete the highest quality work within the prescribed time frame.



Figure 2: The pillars at the wharf at Manakara

Create sustainable AUPs in Year 2. During the CAP project, AUPs were monitored by a socio-organizer for an average period of three years. This was necessary because it was felt that the road user associations needed close guidance by project staff before they could be allowed to function independently. To date, most AUPs created during the CAP project are still operational to various degrees of success. However, the ReCap project, with its limited time frame, will be unable to devote as much time nurturing AUPs. Consequently, the interventions by the ReCap staff need to be more effective and better adapted to the reduced time frame that is available to support these organizations. The objective still remains the same, i.e. the creation of sustainable AUPs, however it must be done in a much shorter time period.

AUPs created along the RNT 14 will benefit from almost twenty months of constant support whereas those created in the second year of the project may only get six to eight months of training and direction. A much more concentrated, effective effort must be made to nurture these organizations during this reduced time frame. Less time must be spent in the unofficial informal stage where statutes and internal regulations are drafted. This must be done much more quickly and the AUPs must be made functional almost immediately so that it can be prepared to take on the road maintenance functions once work has been completed. Nonetheless, all AUPs must be sustainable and have a similar level of functionality.

3. Project Activities

a. *Ifanadiana – Ikongo Secondary Road, RNT 14/RIP 4 (93 km)*

a. **EBMA - Lot 1 –PK 0 to PK 41**

Proposed Start Date	Scheduled End Date	Responsible Staff Member
April 15, 2002	July 30, 2002	Vero Razafintsalama, Chief Engineer

Work on Lot 1 of the RNT 14 was to be completed by the end of January. Delays caused by the lack of organization by the firm, inadequate and aged equipment along with the sheer size and scope of the project pushed their target end-date well into the second year of the project.



Figure 3: Workers along the RNT 14, Lot 1

The firm was granted a partial work stoppage due to the difficulty in continuing earthwork during the rainy season. The partial stoppage, however still allowed the

firm to continue drainage, protection, bridge repair and other work that is not hampered by the wet weather conditions. The partial stoppage started on February 14th and will continue until April or May when the heavy rains subside. This period will also allow the firm to repair their broken down equipment and to catch up on the production of construction material such as gravel for the road surface.

They have experienced significant delays and are having difficulties making any significant progress with the forty-one kilometers that they have to rehabilitate. EBMA's subcontract may be amended reducing the amount of work that they will have remaining. One option for this would be that Lot 1 will be reduced to twenty-seven kilometers and the remaining fourteen will have to be subcontracted to another firm that the project will designate.

EBMA will resume work on May 1 and should complete its work by June 30. In order to be permitted to continue with their subcontract, EBMA's equipment must also pass a mechanical inspection conducted by an expert hired by the ReCap project.

b. EGEORAM - Lot 2, PK 46 to PK 93

Proposed Start Date	Scheduled End Date	Responsible Staff Member
April 15, 2002	June 15, 2002	Vero Razafintsalama, Chief Engineer

Work on Lot 2 of the RNT 14 was to be completed by mid-January. However EGEORAM encountered the same problems that besieged EBMA: unreliable construction equipment, poor organization of the work site, faulty or inexistent work planning and an unrealistic deadline. Consequently, they requested and were granted a one-month extension. However due to the heavy rains in February and March were allowed to partially suspend work during those months.

The political situation and roadblocks has made it difficult for the firm to acquire fuel or construction material in order to continue working. While they are scheduled to resume work on April 1st, once they are able to begin, they will be able to complete most of the work along the RNT 14 to the entrance of the town of Ikongo within one month.



Figure 4: RNT 14, Lot 2

The project also decided to upgrade our intervention in the town and rehabilitate the last one-kilometer of the road to PK 93 as stated in the subcontract (no work was originally planned). This additional work, which will be part of an amendment to the EGEORAM subcontract, should not take more than one month to complete. EGEORAM will therefore require two months to complete all of the rehabilitation

of Lot 2 of the RNT 14. If they are able to resume all activities by April 15th, they should be finished by June 15th.

b. TERTIARY roads (target 140 km)

a. RN 12 - Sahasinaka - Bekatra Tertiary Road, RP 1102F and RP 1103F (56 km)

Proposed Start Date	Scheduled End Date	Responsible Staff Member
October 17, 2001	April 30, 2002	Jean-Claude Razanamparany, Chief Studies Engineer

The firms working on the Sahasinaka road were able to complete their work closer to schedule than those along the RNT 14. While Lot 1 is still one month behind the others, Lots 2 and 3 are now completed. Tahina, the firm working on Lot 1, will complete the work under their contract by April 30th.



Figure 5: Sahasinaka Road, Lot 2

b. RNT 14 bis (6km)

Proposed Start Date	Scheduled End Date	Responsible Staff Member
April 15, 2001	June 15, 2002	Jean-Claude Razanamparany, Chief Studies Engineer

Pre-selected firms were invited to bid on this roadwork in February and proposals were received in early March. By mid-March it was determined that EGEORAM had submitted the lowest bid and scored highest overall. The firm has been notified that they submitted the winning bid and the contract will be signed shortly. They will be issued the Work Order to start work once conditions permit. If they are able to start on April 15th they can conclude the work by June 15th or two months after they are given the work order to begin. This road starts at the RNT 14 at PK 61 and ends at the town of Manapatrana FCE station.

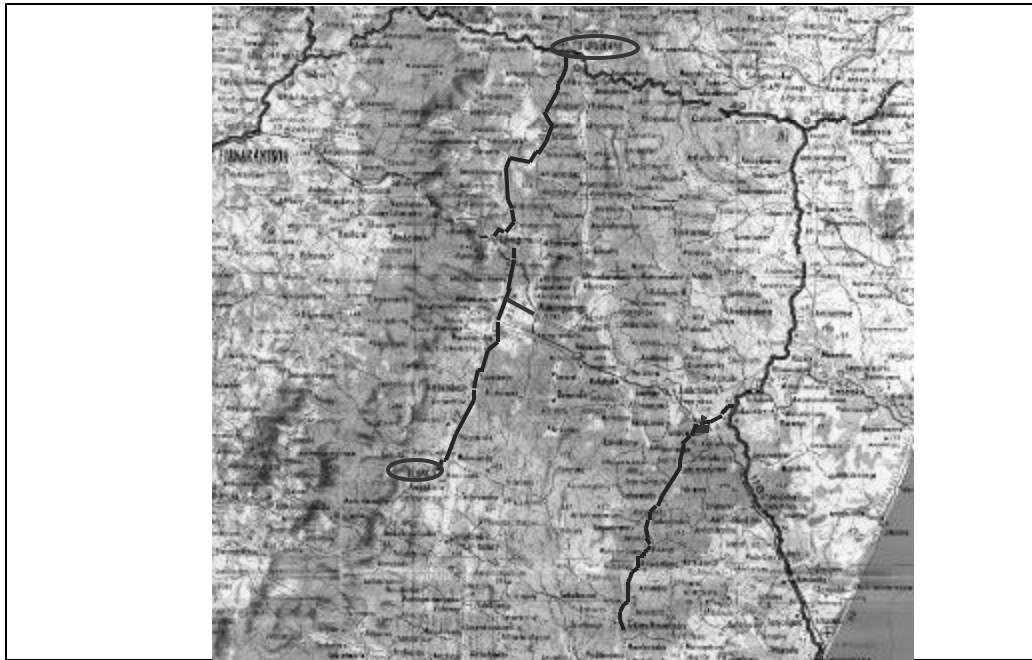


Figure 6: Map of roads rehabilitated in Fianarantsoa Province

c. Tertiary Roads in Tamatave Province (78 km)

Proposed Start Date	Scheduled End Date	Responsible Staff Member
May 1, 2002	November 30, 2002	Jean-Claude Razanamparany, Chief Studies Engineer

Studies for the first forty-two kilometers of tertiary roads to be rehabilitated in Year 2 were undertaken during the months of February and March. A second team started the field surveys for the remaining road sections one month behind schedule due to the fuel shortage and political insecurity.

In order to minimize the likelihood of significant delays and difficulties in completing the work, shorter road sections will be put out for bid this year. The sections vary in length from two to thirteen kilometers (see below).

Table 2: Tertiary Roads in Tamatave Province to be rehabilitated in Year 2

Lot	Road	Fivondronana	Length (km)
1	Ankasina -Antendrondrano	Ambatondrazaka	11.4
2	Ambohijanaharikely -Kaloara	Ambatondrazaka	7.3
3	Ambavahadiromba-Antsaahalemaka	Ambatondrazaka	13.5
4	Ankazotsaravolo -Antandava	Ambatondrazaka	11.4
5	Tsarahonenana-Antsaahalemaka	Ambatondrazaka	7.2
6	Bekatsaka-Ambatomafana	Ambatondrazaka	6.0
7	Andromba-Ambatomafana	Ambatondrazaka	7.0
8	Antanetilava-Morarano	Ambatondrazaka	2.2

The bidding process was launched on March 25th and bids are due on April 15th. Contracts will then be signed by May 1st. Construction firms normally require one month to mobilize their equipment at the work site therefore the Work Orders to commence will be issued by June 1st. Taking into account time lost to rain days, the inevitable breakdown of construction equipment and the general lack of capacity of the local firms, the firms will require two to four months to rehabilitate these roads bringing them to September 30th.

In order to minimize the effect of frequent cumulative delays, close monitoring and effective, timely, corrective action must be taken to address problems and keep the firms as close to schedule as possible.

It is our hope that the situation in the country will improve in the coming weeks in order for work to commence as scheduled in May. If that is not the case, additional time beyond the scheduled project end date in December will be required to complete the roadwork, process final invoices and make the a final acceptance.

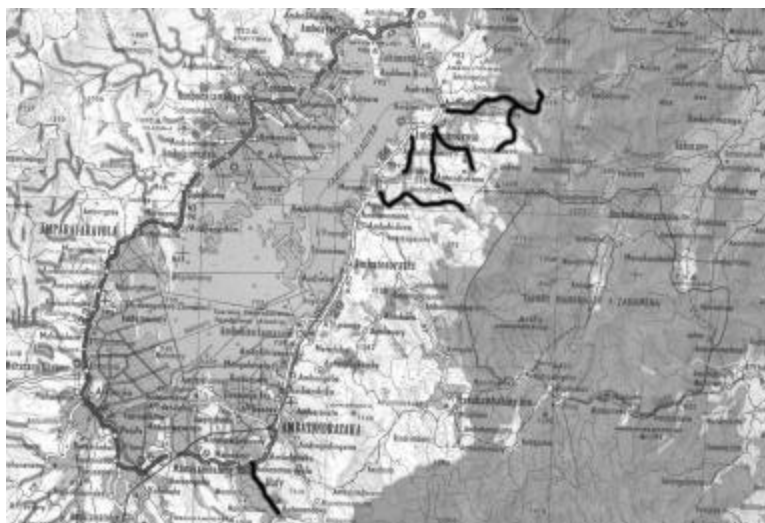


Figure 7: Map of the roads to be rehabilitated in the Ambatondrazaka/Imermandroso region

The field surveys were started in early April and the fieldwork will be completed by mid-month. Another two to three weeks are required to finalize the bidding documents. If the bids are launched in early May the contracts should be signed in June. If work starts in July and take four to complete, the final road section will be completed by the end of October.

c. AUPs

Proposed Start Date	Scheduled End Date	Responsible Staff Member
May 1, 2002	November 30, 2002	Harinjaka Rakotoarisolo, Association Development Manager

The Task Order requires the formation of twenty Road User Associations (AUP) along the RNT 14 and thirty for the tertiary roads. To date, eight have been created from Ifanadiana to Ikongo and five for the Sahasinaka road. We now believe that it is best to create no more than one AUP per commune. The main reason for this is that the AUP may serve as a recipient of state funding under the Fonds d'entretien Routier (FER). Having more than one legal entity eligible to receive funding per commune will dilute the efficiency of the funds and create conflicts between the competing

organizations. The same problem would apply to the tolls. While village level structures have been created (road user groups – GUP) they do not have any legal status but serve as the basic road maintenance structure.

For the remaining seventy eight-kilometers of tertiary roads to be rehabilitated, no more than eight additional AUPs will be created assuming one per commune and a commune being approximately ten kilometers long. Consequently, a total of sixteen AUPs will be created for the maintenance of the tertiary roads rehabilitated under the ReCap project.

d. Port of Manakara

Proposed Start Date	Scheduled End Date	Responsible Staff Member
April 15, 2002	November 30, 2002	Vero Razafintsalama, Chief Engineer

Work at the Port of Manakara was scheduled to start in 2001 but was delayed following the issuance of the USAID sponsored feasibility study of the Port and LDI/FCER donors conference to locate funding for the remaining rehabilitation the FCE railroad and the Port. The World Bank pledged to provide funding to upgrade the Port to receive deep-sea vessels and build a new wharf on a reef nearly one -kilometer offshore on condition that the Port and Railroad are privatized before the end of 2002.

Despite the uncertainty and delays associated with World Bank funding, it was decided to proceed with the ReCap wharf repair at the Port of Manakara. This will provide an immediate solution to the infrastructure problem and lead to an increase in economic activity at the Port before the full-scale multi-million dollar reconstruction begins.

Work to rehabilitate the warehouses, which are currently unsuitable for the storage of commercial products, were not started late last year so that work would not continue during the rain/cyclone season. The bids were launched in January and proposals were received in February. The bids have been analyzed but the signature of the subcontract is being delayed due to current political crisis. This first phase of work will be to completely repair the two most important structures. The decision to repair any additional warehouses will be made after an analysis is made of remaining funds following the signature of the wharf repair subcontract.



Figure 8: Port of Manakara Warehouses

The wharf repair work, which encompasses the north one hundred meter section, is technically challenging and requires specialized engineering knowledge and expertise.

A short-term local engineering consultant was hired to prepare the Terms of Reference for the RFP of this work.

Pre-selected firms and other local firms determined to have the capacity to undertake the repair work were invited to prepare proposals. Firms were asked to prepare technical designs and propose their own solutions for the repair of the wharf structure. The RFP was launched in March and proposals are due April 26th. If the contract is signed in May, work will be completed five months later in October or November.

e. *Short-Term Engineering Technical Assistance*

While it was originally envisioned to hire a full-time engineer after the visit of Ken Rikard in January, the current authorized departure status here in Madagascar makes the likelihood of finding or even getting one approved to travel here very difficult. Other options would be to hire a local expatriate engineer or increase the number of short-term assignments scheduled to take place once the situation returns to normal. The table below shows a proposed list of engineering assignments.

Table 3: Proposed Engineering Assignments, 2002

Name of Engineer	Month	Length of Assignment
Frantz Joseph	July 2002	15 days
Ken Rikard	August 2002	10 days
Frantz Joseph	October 2002	10 days

4. Projected Expenses

It is not possible to estimate expenses for the remainder of the year given the uncertainties regarding the future of the project. However when all of the projects are functioning normally expenses average \$300,000 per month.

Table 4: Projected Expenses by Line Item

Line Items	Budget	Expenses to Feb. 28, 2002	Remaining Funds
Work days Ordered	893,080		
Material	4,251,304		
General and Administrative	205,416		
Total	5,349,800		